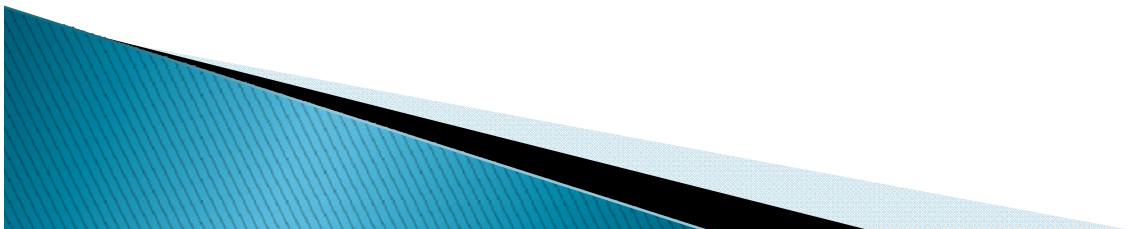




Ecosystem Services

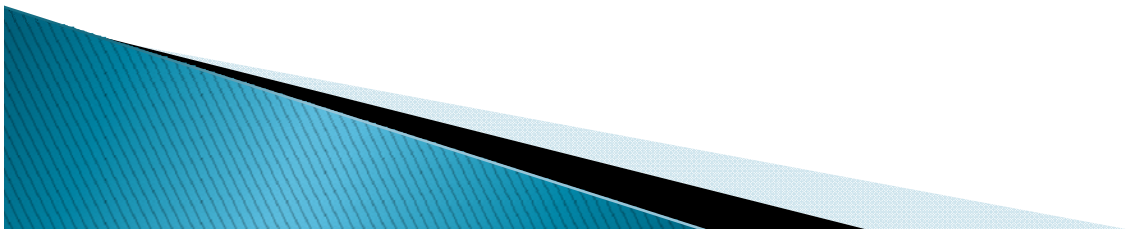
- ▶ Update 2013 Finance Strategy
- ▶ Goods and services from Rivers and Floodplains
- ▶ \$\$ Value of Ecosystem Benefits



Target Audience: YOU

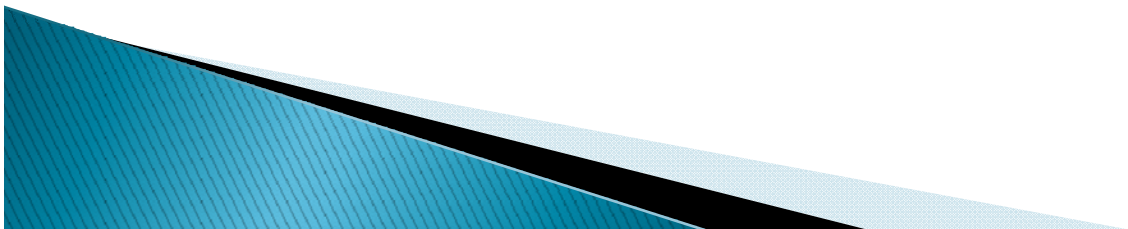
Especially if your budget shows:

- ▶ Only cost side of Habitat Projects
- ▶ Financial Benefit not obvious



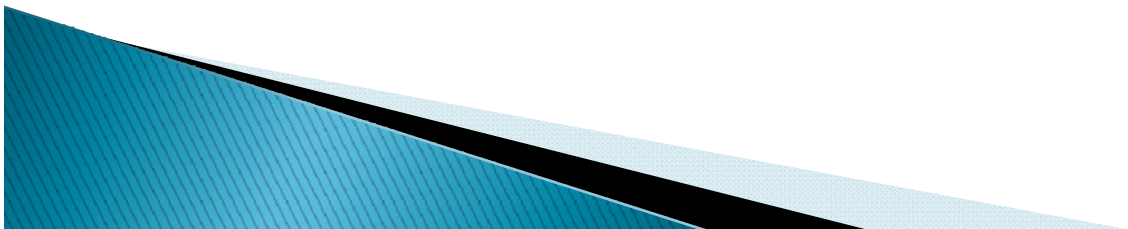
Message

- ▶ Protecting and Restoring Nature has Financial Benefits: Avoids costs, Saves money
- ▶ Reduces Conflict between Water Management and Ecosystem Restoration
- ▶ New Decisions need to Include Life Cycle Cost



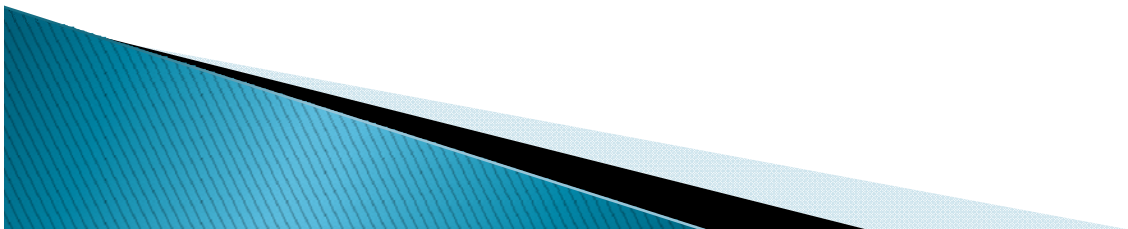
Project Scope

- ▶ Represent nature's values in economic terms:
\$\$\$
- ▶ Identify budgets for ecosystem services
- ▶ Evaluate costs when nature doesn't provide what we want--and we have to buy it



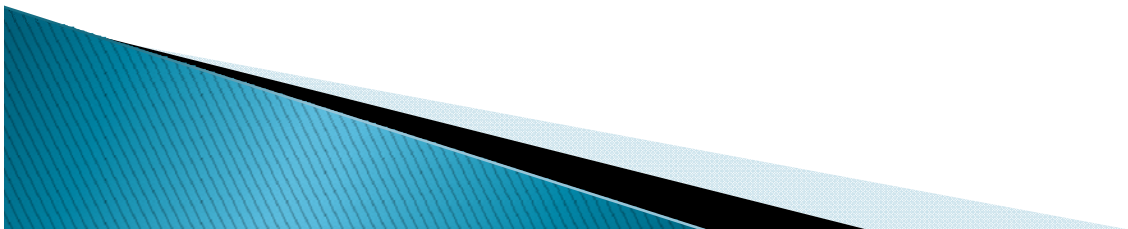
Technical Approach

- ▶ Constructed Facilities Replace Lost Goods and Services
- ▶ Cost of Facilities = Measure of nature's value
- ▶ Include Construction, Land, O&M, Debt Service



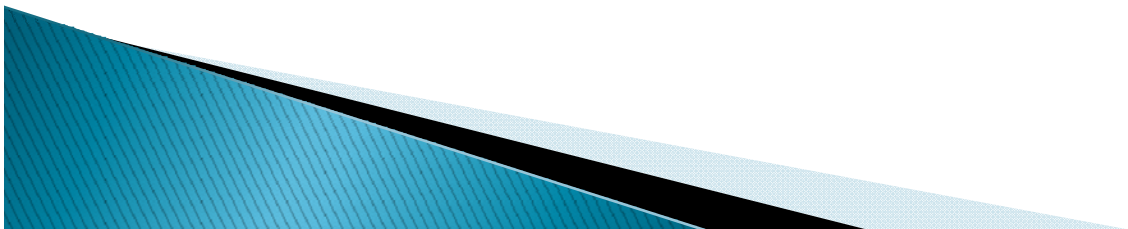
Not a complete valuation

- ▶ Not all Goods or Services
- ▶ Not all Aspects of each Service
- ▶ Not all Costs for Service
- ▶ Not Statewide—Only local examples



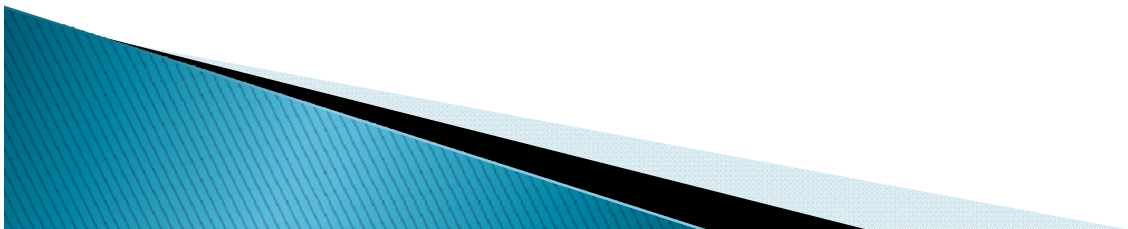
Nature's Goods and Services

- ▶ Fish
- ▶ Erosion control by floodplains
- ▶ Clean water
- ▶ Groundwater recharge
- Later:
- ▶ Carbon sequestration
- ▶ Subsidence reversal in Delta



Their Substitutes: Constructed Facilities

- ▶ Fish Hatcheries
- ▶ Riprap on Levees
- ▶ Water Treatment Plants
- ▶ Recharge Basins



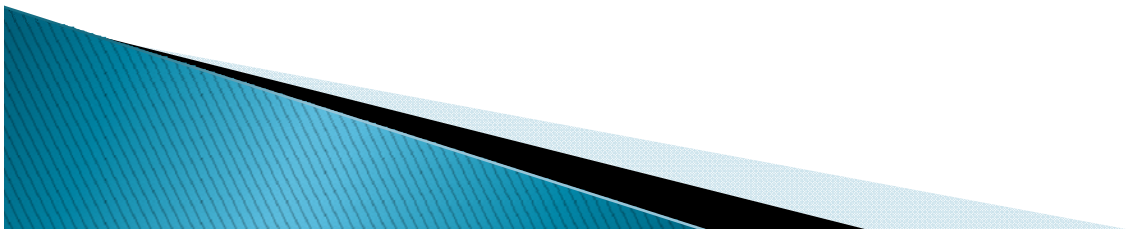
Fish Hatcheries

- ▶ 7 hatcheries for salmon and steelhead

O&M = \$7.3 million/yr

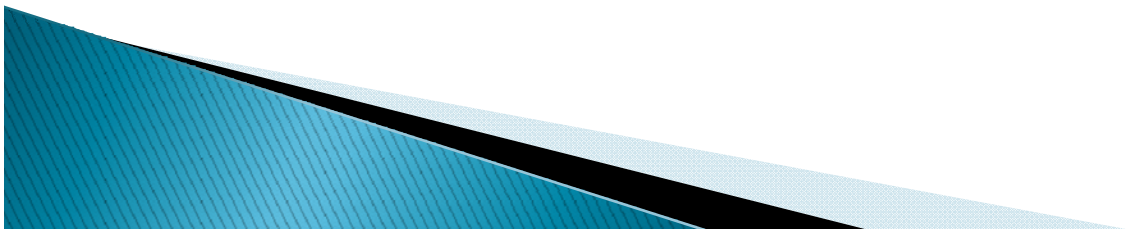
new hatchery = \$10--\$30 million

Today's cost to build = up to \$210 million



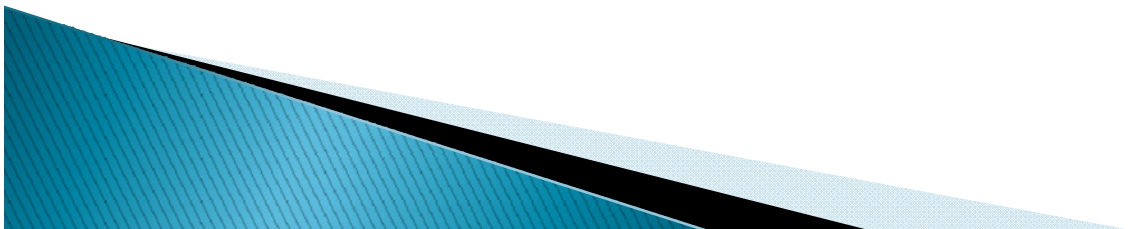
Other Fish Culture

- ▶ Commercial—Tilapia, Catfish, Sturgeon
- ▶ Hard to get Private Sector Cost Data



Erosion control with Riprap

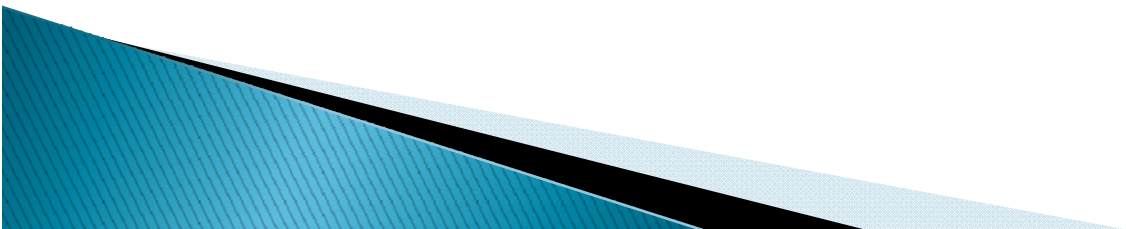
- ▶ 835,000 feet of riprap—Sacramento River Basin
- ▶ About \$3,000 per foot—Today's price
- ▶ Worth \$2.6 Billion



Erosion control (cont.)

Concrete-lined stream channels

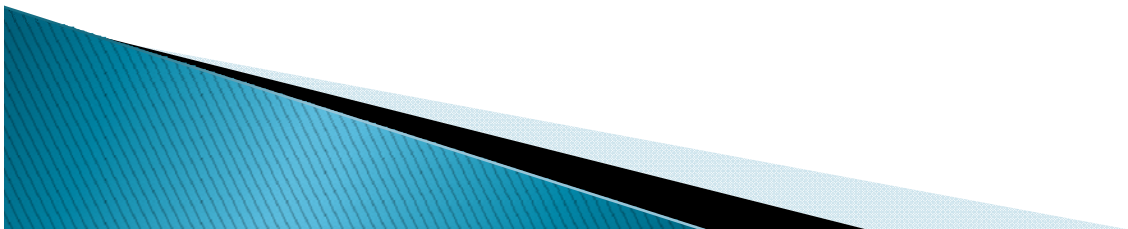
- ▶ Common in urban areas
- ▶ Searching for cost figures



Water Treatment

Santa Monica Treatment Plant

- ▶ 320,000 gallons/day of urban runoff (about 1 acre foot per day)
- ▶ \$15 million to build
- ▶ \$220 K annual O&M



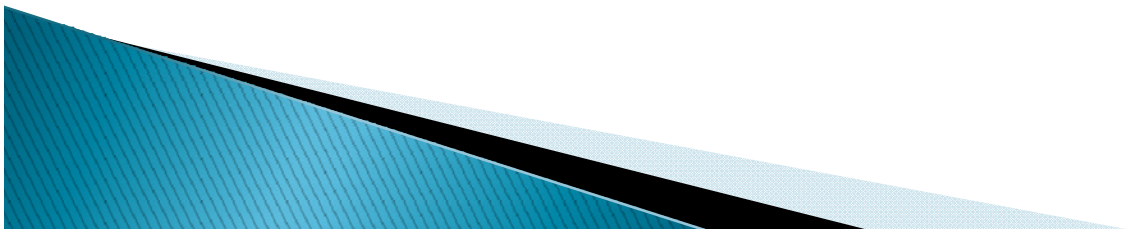
Drinking-water treatment

Sacramento Water Treatment Plants

- ▶ 2 Plants
- ▶ Rehab \$157 M, plus \$10 M/year debt service

San Bruno Plant

- ▶ Upgrade \$175 M



How you can Help

- ▶ Provide budget numbers
 - ▶ Link us with people who have numbers
 - ▶ Review the report
 - ▶ Spread the word
-
- ▶ mperrone@water.ca.gov
 - ▶ ealejand@water.ca.gov

